

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/24951

A. CLASSIFICATION OF SUBJECT MATTER

IPC: (2) E04H 1/00(2006.01);E04B 1/346(2006.01)

USPC: 52/79.5,64,79.8,79.1,63,83

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 52/79.5,64,79.8,79.1,63,83

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,964,065 A (MIGURSKI ET AL) 12 OCTOBER 1999 (12.10.1999), FIGURES 1-15B	1-84
A	US 5,916,096 A (WIESMANN ET AL) 29 JUNE 1999 (29.06.1999) FIGURES 1-8	1-84
A	US 6,243,993 A (SWENSSON) 12 JUNE 2001 (12.06.2001), FIGURES 1-8	1-84

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
27 February 2006 (27.02.2006)

Date of mailing of the international search report

17 MAR 2006

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201Authorized officer
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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-84, drawn to a shelter.

Group II, claim(s) 85-105, 113-114, drawn to an oxygen generator.

Group III, claim(s) 115-155, drawn to air treatment device.

The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the shelter of group I contains limitations that are not needed of group II or III, and the limitations are distinctive in nature; group II to the oxygen generator is to a device for producing oxygen and is different from the concept of a shelter; and group III to the air treatment device is to structure that allows for the decontamination of air and is distinctive from the oxygen generator and a shelter.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 065508-9001	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2004/024951	International filing date (<i>day/month/year</i>) 30 July 2004 (30.07.2004)	Priority date (<i>day/month/year</i>) 31 July 2003 (31.07.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant ROSCIOLI, Edward, V.			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).		
2.	This REPORT consists of a total of 8 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.		
3.	This report contains indications relating to the following items:		
	<input checked="" type="checkbox"/> Box No. I	Basis of the report	
	<input type="checkbox"/> Box No. II	Priority	
	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	
	<input checked="" type="checkbox"/> Box No. IV	Lack of unity of invention	
	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
	<input type="checkbox"/> Box No. VI	Certain documents cited	
	<input type="checkbox"/> Box No. VII	Certain defects in the international application	
	<input type="checkbox"/> Box No. VIII	Certain observations on the international application	
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Date of issuance of this report 10 April 2006 (10.04.2006)
	Authorized officer <p style="text-align: center;">Philippe Becamel</p> Telephone No. +41 22 338 70 90

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

REC'D 21 MAR 2006

WIPO

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 17 MAR 2006	
Applicant's or agent's file reference 065508-9001	
FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/US04/24951	International filing date (day/month/year) 30 July 2004 (30.07.2004)
Priority date (day/month/year) 31 July 2003 (31.07.2003)	
International Patent Classification (IPC) or both national classification and IPC IPC: (9) E04H 1/00(2006.01),E04B 1/346 USPC: 52/79.5,64,79.8,79.1,63,83	
Applicant ROSCIOLI EDWARD V.	

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 27 February 2006 (27.02.2006)	Authorized officer PHI DIEU TRAN A Telephone No. 703-872-9325
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/24951

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
- ☐ paid additional fees
 - ☐ paid additional fees under protest and, where applicable, the protest fee
 - ☐ paid additional fees under protest but the applicable protest fee was not paid
 - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-84

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 4, 5, 37, 63-71 YES

Claims 1-3, 6-36, 38-62, 72-84 NO

Inventive step (IS)

Claims NONE YES

Claims 1-84 NO

Industrial applicability (IA)

Claims 1-84 YES

Claims NONE NO

2. Citations and explanations:

Please See Continuation Sheet

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-3, 6-36, 38-62, 72-84 lack novelty under PCT Article 33(2) as being anticipated by Migurski et al.

Migurski et al shows a shelter system comprising an enclosure disposeable within the environment and formed of an air impermeable material (figure 1A), the enclosure being configured to define an interior chamber, to contain a quantity of air within the chamber, and to substantially prevent entry of the environment air into the chamber (col 2 lines 21-24), an oxygen generator (col 7 line 31) disposeable within the enclosure, the oxygen generator including a chemical oxygen generator device for generating oxygen and being configured to discharge oxygen into the enclosure air, a carbon dioxide removal device (col 6 lines 47-55) disposeable within the enclosure and including an interior chamber and a reactive material disposed within the device chamber (inherently so) and configured to remove carbon dioxide from the air, the enclosure is configured to expand from a storage configuration to a deployed configuration and to alternatively contract from the deployed configuration to the storage configuration, the environment including a building having a first room and a second room (figure 14A), the enclosure including a first section disposeable within the first room and a second section connected with the first section and disposeable within the second room, the enclosure chamber extending through the two enclosure sections, the environment including a vehicle having an interior chamber and the enclosure being disposed within the vehicle chamber, the maximum volume being of sufficient magnitude to entirely contain at least one person, the enclosure substantially preventing egress of enclosure air to into the environment, the environment having a building having at least one room and the enclosure being disposeable within the room, the two chamber sections containing the enclosure air, the room having at least one generally vertical wall and a generally horizontal ceiling and the enclosure is removably connectable with at least one of the wall and the ceiling so as to support the enclosure in the usage configuration, the two enclosure sections being removably connected together, the enclosure including at least one generally thin and flexible sheet of material formed into a bag, the enclosure having a passage opening sized to permit a person to move between the environment and the enclosure chamber and a cover configured to substantially seal the opening, the enclosure including at least one sheet of a first flexible material, the material including a layer of a metallic substance, at least one sheet of a second flexible material, the second material being at least generally transparent so as to provide a window, the enclosure being a residence enclosure (inherently so as it is occupied by a person) and further comprising at least one decontamination enclosure connected with the residence enclosure and defining an interior chamber (figures 14A-14B), the enclosure having a first opening extending between the decontamination chamber and the environment and a second opening extending between the decontamination chamber and the residence enclosure chamber, the decontamination enclosure including a first cover configured to seal the first opening and a second cover configured to substantially seal the second opening, means for removing carbon dioxide from the air (per the HVAC unit), a frame configured to maintain the enclosure disposed in the usage configuration, the frame being collapseable from a deployed configuration to a storage configuration, the frame supporting the enclosure when arranged in the deployed configuration, the enclosure having an interior surface and an exterior surface and the frame is one of contactable with the inner surface and connectable with the exterior surface, the

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In case the space in any of the preceding boxes is not sufficient.

enclosure having a bottom wall, a top wall, at least one sidewall extending between the bottom and top walls, the shelter comprising at least one support member having an upper end and a lower end, the lower end being contactable with the enclosure bottom wall and the upper end being contactable with one of the top wall and the side wall, the support being configured to maintain the top wall spaced vertically above the bottom wall to maintain the enclosure disposed in the usage configuration, at least one appliance fixture (col 2 lines 31-35), the enclosure including an opening configured to sealing engage about at least a portion of the fixture such that the fixture is usable by a person located within the enclosure while the chamber air is substantially isolated from the environment air, the appliance is one of a bathroom shower, a bathroom sink, a bath tub, a toilet, and a kitchen sink (inherently so as these appliances are needed in OR), at least one sealing member disposed about an interface between the two enclosure connective portions and configured to prevent air flow through the enclosure interface, the enclosure is disposable within a single one of the two building rooms when the enclosure is disposed in the storage configuration, at least one of the enclosure sections having a passage opening sized to permit a person to move between the environment and the enclosure chamber and a cover configured to substantially seal the opening, the first room being a closet (inherently capable of being a closet), the second room being a bedroom, at least one decontamination enclosure connected with the enclosure having a first passage opening extending between the decontamination interior space and an exterior space and a second passage opening extending between the interior space and one of the two enclosure interior space sections, a first cover configured to substantially seal the first passage opening and a second cover configured to substantially seal the second passage opening, means for generating and discharging oxygen into the chamber and means for removing carbon dioxide from the air, a vehicle having an interior chamber, an enclosure disposed at least partially within the vehicle chamber and formed of a flexible air impermeable material, the vehicle being an emergency vehicle, the enclosure is configured to substantially prevent entry of environment air into the chamber, the enclosure is configured to substantially prevent egress of enclosure air into the environment (inherently so), a first section disposable within the vehicle chamber and a second section disposable externally of the vehicle, the vehicle including an interior surface, the vehicle surface at least partially defining the interior chamber, the enclosure is connectable with the vehicle surface so as to maintain the enclosure disposed in the usage configuration, the support is a frame formed of a plurality of interconnected elongated members, a connector unit attached to the enclosure and being configured to electrically connect an electrical device located within the chamber with an electrical power supply located in the environment (inherently so), the connector being further configured to substantially prevent air flow through the connector unit, the enclosure including at least one wall with an opening and the connector including a base, the base being disposed one of at least partially within the opening and adjacent to the opening and attached to the wall, at least one opening extending through the base, at least one electrical line having a portion disposed within the base opening, the wall opening and the base opening being each sealed so as to substantially prevent air flow through each one of the two openings, an electrical outlet attached to the base and electrically connected to the electrical line such that at least one electrical device located within the enclosure is engageable with the outlet to connect the device with the power supply, the electrical line having a first end and a second end connected with the power supply (inherently so), the base including a plurality of openings and the connector including a plurality of electrical lines, each line having a portion disposed within a separate one of the base openings, the electrical device being an air conditioner, a connector further including a fluid line fluidly connected to a source of water and configured to permit water to flow into the chamber (inherently so as there is water usage in the chamber), a first heat exchanger being configured to absorb heat from the enclosure air, a second heat exchanger disposed within the environment (per HVAC system), the connector including at least one fluid line fluidly connected with each one of the first and second heat exchangers and configured to permit a refrigerant to flow between the first and second heat exchangers, a waste receptacle located within the chamber (waste disposal).

Claims 4, 5, 37 lack an inventive step under PCT Article 33(3) as being obvious over Migurski et al (5964065).

Migurski et al shows all the claimed limitations except for the oxygen generator including a housing disposable within the chamber and having an interior chamber and an opening, the opening extending into the interior chamber and being fluidly connectable with the enclosure chamber, a quantity of an oxygen producing material removably disposable within the housing chamber and configured to generate oxygen by spontaneous chemical reaction, the housing being configured such that the oxygen generated by the material flows from the housing chamber through the housing opening and into the chamber, the carbon dioxide removal device further including a housing bounding the interior chamber and having an inlet fluidly connecting the chamber with the removal device chamber and an outlet fluidly connecting the device chamber with the enclosure chamber, a fan connected with the housing and configured to initiate flow of a portion of the enclosure air into the inlet through the reactive material disposed within the removal chamber out of the outlet and back to the enclosure chamber.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Migurski et al's structure to show oxygen generator including a housing disposable within the chamber and having an interior chamber and an opening, the opening extending into the interior chamber and being fluidly connectable with the enclosure chamber, a quantity of an oxygen producing material removably disposable within the housing chamber and configured to generate oxygen by spontaneous chemical reaction, the housing being configured such that the oxygen generated by the material flows from the housing chamber through the housing opening and into the chamber, the carbon dioxide removal device further including a housing bounding the interior chamber and having an inlet fluidly connecting the chamber with the removal device chamber and an outlet fluidly connecting the device chamber with the enclosure chamber, a fan connected with the housing and configured to initiate flow of a portion of the enclosure air into the inlet through the reactive material disposed within the removal chamber out of the outlet and back to the enclosure chamber because having an oxygen generator including a housing disposable within the chamber and having an interior chamber and an opening, the opening extending into the interior chamber and being fluidly connectable with the enclosure chamber, a quantity of an oxygen producing material removably disposable within the housing chamber and configured to generate oxygen by spontaneous chemical reaction, the housing being configured such that the oxygen generated by the material flows from the housing chamber through the housing opening and into the chamber would ensure the emergency patients acquire needed easy to package oxygen per the material in far away areas, and the carbon dioxide removal device further including a housing bounding the interior chamber and having an inlet fluidly connecting the chamber with the removal device chamber and an outlet fluidly connecting the device chamber with the enclosure

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

chamber, a fan connected with the housing and configured to initiate flow of a portion of the enclosure air into the inlet through the reactive material disposed within the removal chamber out of the outlet and back to the enclosure chamber would enable the enclosure interior environment able to support patients.

Per claim 37, Migurski et al shows all the claimed limitations except for the building having at least two floors, the first room is located on one of the two floors and the second room is located on the other one of the floors.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Migurski et al's structure to show the building having at least two floors, the first room is located on one of the two floors and the second room is located on the other one of the floors having the rooms stacked would enable the enclosure to provide more space for patients within a small environmental area.

Per claims 63-71, Migurski et al shows all the claimed limitations. The claimed method steps would have been the obvious method steps of constructing Migurski et al's structure.